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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,029	08/16/2006	Kentaro Ryuh	70404.110/ok	9354

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EXAMINER

MOON, SEOKYUN

ART UNIT	PAPER NUMBER
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2629

NOTIFICATION DATE	DELIVERY MODE
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07/09/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/598,029	Applicant(s) RYUH ET AL.	
	Examiner SEOKYUN MOON	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/16/06&11/01/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. The Applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d) based on an application filed in Japan on February 17, 2004 has been acknowledged.

Information Disclosure Statement

2. The information disclosure statements (IDS) filed on August 16, 2006 and November 01, 2006 have been acknowledged and considered by Examiner. Copies of the form PTO-1449 are included in this correspondence.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nobuyoshi (JP Pub. No. 2001-117533).

As to **claim 1**, Nobuyoshi teaches a display device [drawing 1] comprising a display panel ("170") [drawing 1] and driving circuitry ("11", "12", "13", "14", "15", "16", "18", and "19") for driving the display panel, wherein,

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the display panel includes a first display section ("170a") and a second display section ("170b") [drawing 1];

the first display section ("170a") includes a plurality of first scanning lines (the plurality of horizontal lines arranged on the panel "170a") [drawing 1], a plurality of first signal lines (the plurality of vertical lines arranged on the panel "170a"), a plurality of first pixels each connected to one of the plurality of first scanning lines and one of the plurality of first signal lines [paragraph (0001)];

the second display section ("170b") includes a plurality of second scanning lines (the plurality of horizontal lines arranged on the panel "170b") [drawing 1], a plurality of second signal lines (the plurality of vertical lines arranged on the panel "170b"), a plurality of second pixels each connected to one of the plurality of second scanning lines and one of the plurality of second signal lines [paragraph (0001)]; and

the driving circuitry includes a first scanning line driving circuit ("*scanning driver 16a*") [drawing 1] for supplying a first scanning signal to the plurality of first scanning lines, a first signal line driving circuit (a combination of "14a" and "15a") for supplying a first data signal to the plurality of first signal lines, a second scanning line driving circuit ("*scanning driver 16b*") for supplying a second scanning signal to the plurality of second scanning lines, and a second signal line driving circuit (a combination of "14b" and "15b") for supplying a second data signal to the plurality of second signal lines, the driving circuitry being capable of driving the first display section ("170a") with a first vertical scanning frequency and driving the second driving section ("170b") with a

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second vertical scanning frequency which is different from the first vertical scanning frequency [paragraph (0030), emphasis on the last 6 lines].

Nobuyoshi does not expressly teach a plurality of switching elements each of which is connected to one of the plurality of first and second pixels.

However, Examiner takes Official Notice that it is well known in the art to include a plurality of switching elements in a liquid crystal display and to connect each of the plurality of switching elements to each of a plurality of pixels to control data transmission from a data driver to the plurality of pixels.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the display device taught by Nobuyoshi to include a plurality of switching elements and to connect each of the plurality of switching elements to each of the plurality of pixels, in order to reduce the power consumption of the display device (Note that an active matrix type liquid crystal display device consumes less power than a passive matrix type liquid crystal display device.).

As to **claim 2**, Nobuyoshi teaches that the first vertical scanning frequency and the second vertical scanning frequency are set in accordance with type of information (type of data/signal) which are respectively displayed on the first display section and the second display section [paragraph (0030)] (Note that, in the display device of Nobuyoshi, the frame frequency, i.e. the vertical scanning frequency, is determined based on whether the video signal is a NTSC picture signal or a personal computer picture signal.).

As to **claim 3**, Nobuyoshi teaches that the display panel is a liquid crystal display panel [paragraph (0001)] having a pair of substrates and a liquid crystal layer provided between the pair of the substrates.

5. **Claims 4-5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nobuyoshi in view of Baba (US 2002/0003522).

As to **claims 4** and **5**, Nobuyoshi teaches the display device of claim 3, wherein, during one vertical scanning period, the first (a combination of “14a” and “15a”) [drawing 1] and second signal line driving circuits (a combination of “14b” and “15b”) [drawing 1] supply the first and second data signals to the plurality of first and second pixels, respectively [paragraph (0021)]; and

for a predetermined length of time within the length of time corresponding to one vertical scanning period, the plurality of first and second pixels are placed in a state of retaining the first and second data signals, respectively [paragraph (0001), pixels of a liquid crystal display retain image data signals in a frame period].

Nobuyoshi does not teach that the first and second signal line driving circuits supply first and second black display signals corresponding to display black to the plurality of first and second pixels with a different timing from the timing of supplying the first and second data signals during one vertical scanning period and the plurality of first and second pixels are placed in a state of retaining the first and second black signals for a predetermined second length of time within the length of time corresponding to one vertical scanning period.

However, Bada teaches a display device [fig. 7] comprising a signal line driving circuit ("*signal line driving circuit 25*") which supplies black data signal corresponding to display black [fig. 3] to a plurality of pixels with a different timing from the timing of supplying data signals during one vertical scanning period, wherein the plurality of pixels are placed in a state of retaining the black signals for a predetermined second length of time ("*black image display period*") [fig. 3] within the length of time corresponding to one vertical scanning period.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the first and second signal line driving circuits taught by Nobuyoshi to supply first and second black display signals corresponding to display black to the plurality of first and second pixels with a different timing from the timing of supplying the first and second data signals during one vertical scanning period, wherein the plurality of first and second pixels are placed in a state of retaining the first and second black signals for a predetermined second length of time within the length of time corresponding to one vertical scanning period, as taught by Bada, in order to prevent blurring phenomenon of the display device.

6. **Claims 6-8 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nobuyoshi in view of Kwon (US 6,360,149).

As to **claim 6**, Nobuyoshi does not teach the display device of claim 1 being a display device for an instrument panel mounted in an automotive vehicle.

However, Kwon teaches a concept of providing a display device ("*display screen 36*") [fig. 4] for an instrument panel ("*command module 20*") mounted in an automotive

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vehicle, wherein the display device displays at least a velocity of the automotive vehicle and/or a number of revolutions of an engine of the automotive vehicle [col. 4 lines 54-60] and the display device includes a touch sensor selectively provided in the panel of the display device [col. 3 lines 12-14].

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the display device taught by Nobuyoshi for an instrument panel mounted in an automotive vehicle to display at least a velocity of the automotive vehicle and/or a number of revolutions of an engine of the automotive vehicle and to modify the display device to include a touch sensor, as taught by Kwon, in order to provide an instrument panel for an automotive vehicle including an electronic display capable to display different videos from different video sources simultaneously.

As to **claim 7**, Nobuyoshi as modified by Kwon teaches the display device of claim 6, wherein,

the first display section displays at least a velocity of the automotive vehicle and/or a number of revolutions of an engine of the automotive vehicle [Kwon: col. 4 lines 54-60]; and

the first vertical scanning frequency is higher than the second vertical scanning frequency (Note that the display device taught by Nobuyoshi is configured to display images/videos having different vertical scanning frequencies on the display panel, simultaneously) [Nobuyoshi: paragraph (0030)].

As to **claim 8**, Nobuyoshi as modified by Kwon teaches that the display panel includes a touch sensor selectively provided in one of the first display section and the second display section, as discussed with respect to the rejection of claim 6.

As to **claim 10**, Nobuyoshi as modified by Kwon teaches that an automotive vehicle [Kwon: fig. 4] comprises an instrument panel ("*command module 20*") [Kwon: fig. 4] which includes the display device of claim 6.

7. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Nobuyoshi in view of Morita (US 7,154,488).

Nobuyoshi teaches the display device comprising the driving circuitry, as discussed with respect to the rejection of claim 1.

Nobuyoshi does not expressly teach the driving circuitry being formed directly on a substrate of the display panel.

However, Morita teaches a concept of forming a driving circuitry of a display device directly on a substrate of a display panel of the display device [col. 3 lines 13-17].

It would have been obvious to one of ordinary skill in the art at the time of the invention to form the driving circuitry taught by Nobuyoshi directly on the substrate of the display panel, as taught by Morita, in order to minimize the amount of space required to form the components needed to drive the display panel of Nobuyoshi.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEOKYUN MOON whose telephone number is (571)272-5552. The examiner can normally be reached on Mon - Fri (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

June 30, 2009
/S. M./
Examiner, Art Unit 2629

/Sumati Lefkowitz/
Supervisory Patent Examiner, Art Unit 2629